"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

39233

27.1100

S/218/62/027/003/005/005
I018/I218

AUTHOR: Shmerling, Zh. G. and Bass, I. A.

TITLE: Amino acid activating enzymes and transfer-rna in Escherichia coli

PERIODICAL: Biokhimiya, v. 27, no. 3, 1962, 502-511

TEXT: The problem is whether E. coli cells infected with T_2 phage retain their amino acid activating enzymes and the transfer-RNA or whether the s-RNA formed prior to phage infection is capable of binding the activated amino acids. In the experiments, lysates of E. coli spheroplasts were used. Amino acid activation was ascertained by the hydroxamate formed. s-RNA activity was determined by the use of labelled amino acid and isolation of s-RNA-amino acid complex. It was shown that during phage infection, the enzymes which catalyze the formation of amino acyl-adenylates are fully active, i e. they are not affected by phage infection. The activity of enzymes catalyzing the transfer of activated amino acids to s-RNA as well as the activity of s-RNA (the capacity to bind amino acids) are not affected by infection with T_2 phage. The authors conclude that in the synthesis of phage protein participate amino acid activating enzymes and s-RNA of E. coli formed prior to phage infection. There are 3 tables and 2 figures.

ASSOCIATION: Institut atomoni e'nergii im. I. V. Kurchatova Akademii nauk SSSR, Moscow (Institute of Atomic Energy im. I. V. Kurchatov. Academy of Sciences USSR)

SUBMITTED: December 7, 1961

Card 1/1

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

[redacted], Yu.G. (Moskva)

Heterogeneity of DNA and its biological significance. Usp. sovr. biol. 59 no.1:33-56 Ja-F '65.

(MIRA 18:3)

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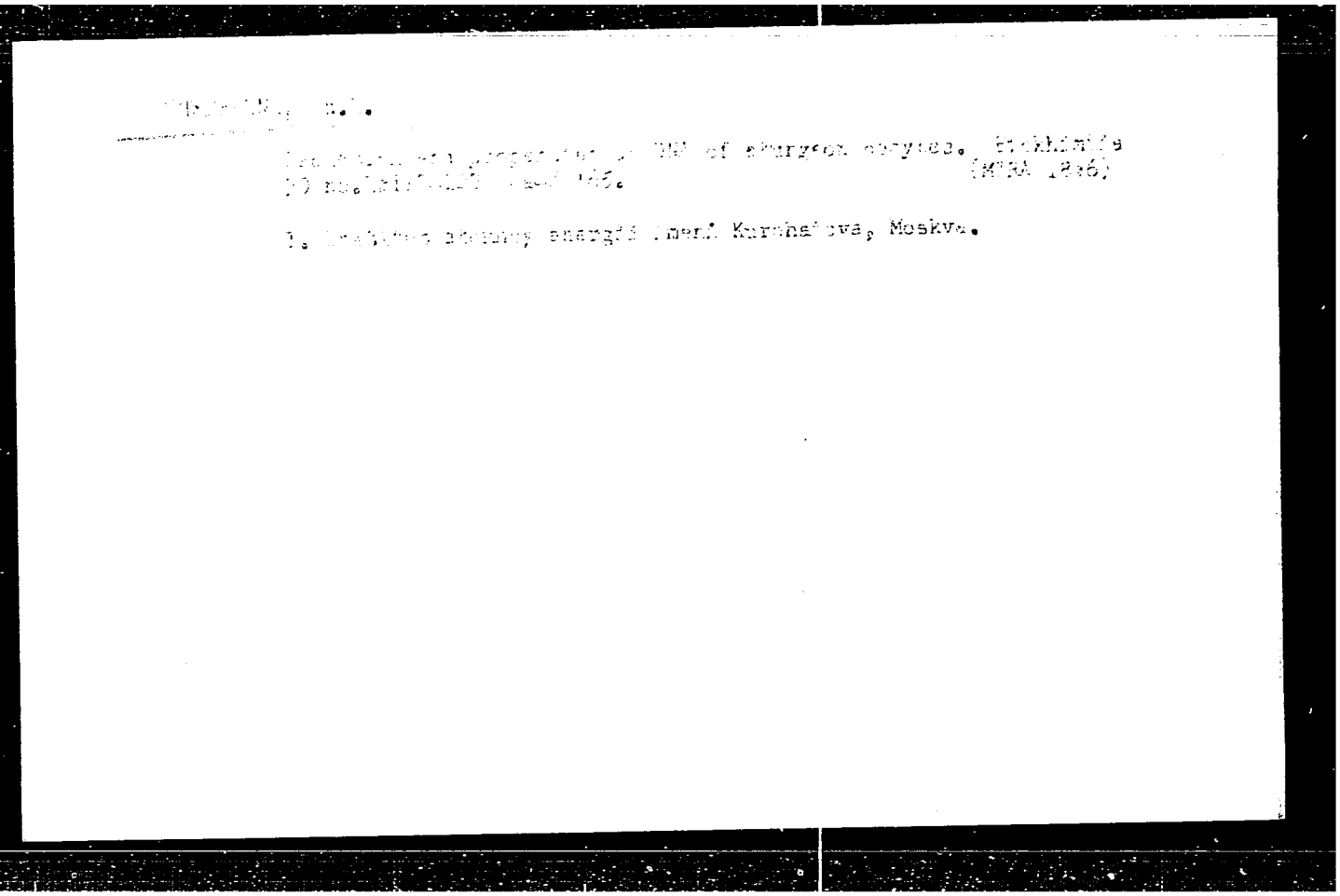

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

L 24758-66 EWT(1)/EWT(m)/T JK/RM

ACC NR: AP6015548 SOURCE CODE: UR/0221/65/059/001/0033/0056

AUTHOR: Shmerling, Zh. G. (Moscow)

ORG: none

TITLE: Heterogeneity of DNA and its biological significance

SOURCE: Uspekhi sovremennoy biologii, v. 59, no. 1, 1965, 33-56

TOPIC TAGS: DNA, genetics, RNA, protein, biologic metabolism, chemical composition

ABSTRACT: The current view of the metabolic stability and functional homogeneity of DNA in cells except at the time of replication of chromosomes is not supported by recent experimental data. These data indicate that there are functional differences in intracellular DNA. One may differentiate between two types of DNA molecules: those of DNA with genetic activity that is capable of transmitting genetic information and those of DNA with metabolic activity, i.e., of DNA that synthesizes the information RNA which effects the synthesis of specific proteins and determines their structure. In the majority of cases both functions are carried out by the same DNA molecules, but in some specific cases the two types of DNA are distinct. No correlation between this

Card 1/2

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L 24758-66
ACC NR: AP6015548

Nonhomogeneity of DNA and its observed physico-chemical and chemical heterogeneity has yet been established, but the fact that there is a heterogeneity of DNA with respect to biological functions, physical properties, and chemical composition (in some cases possibly only because of differences in the degree of polymerization) is demonstrated by many experimental results. The DNA polymerization tests were carried out by O. B. Astaurova. Orig. art. has: 2 figures.
[JPRS]

SUB CODE: 06, 07 / SUBM DATE: none / ORIG REF: 012 / OTH REF: 115

Card 2/2 ULR

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMERMSLER, S.A. (L'vov)

Use of FL-1 readily fusible porcelain material for the preparation of crowns. Stomatologiia 38 no.5:71 S-O '59. (MIRA 13:3)
(DENTISTRY--CERAMICS)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMETER, S., kand. fiziko-matem. nauk

Jet streams and aviation. Kryl. rod. 16 no.10:28-29 O '65. (MIRA 18:12)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

[illegible], [illegible]

"The Content of Chlorine in the Water of Clouds in Connection With Its Microstructure." Sub 10 Jun 51, Central Inst of Weather Forecasting.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHNETER, S.M.

Chlorine content in the water of clouds in connection with their microstructure. Trudy TSAO no.9:3-60 '52. (MIRA 11:6)
(Chlorine) (Clouds)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMETER, S.M. (Editor)

/Various Procedural Problems of Aerological Measurements/, Trudy Tsentral'noy Aerologicheskoy Observatorii (Works of the Central Aerological Observatory), No 12, 1953, Leningrad (Editor: S.M. Shmeter, Candidate of Physicomathematical Sciences).

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMETER, S.M.; POKROVSKIY, V.N.

Influence of the density of air on the readings of fan anemometers. (MIRA 12:1)
Trudy TSAO no.12:18-26 '53.
(Anemometer)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMETER, S.M.

FEDOROV, Ye.Ya., professor; PREDTECHENSKIY, P.P.; BUCHINSKIY, I.Ye.; SEYANINOV, G.T., professor; BOSHNO, L.V.; ALISOV, B.P.; BIRYUKOV, N.N.; GAL'TSOV, A.P.; GRIGOR'YEV, A.A., akademik; EYGENSON, M.S., professor; MURETOV, N.S.; KHROMOV, S.P.; BOGDANOV, P.N.; LEBEDEV, A.N.; SOKOLOV, V.N.; YANISHEVSKIY, Yu.D.; SAMOYLENKO, V.S.; USMANOV, R.F.; CHUBUKOV, L.A.; TROTSENKO, S.Ya.; VANGENGEYM, G.Ya.; SOKOLOV, I.F.; STYRO, B.I.; TEMNIKOVA, N.S.; ISAYEV, E.A.; DMITRIYEV, A.A.; MALYUGIN, Ye.A.; LIEDEMAA, Ye.K.; SAPOZHNIKOVA, S.A.; RAKIPOVA, L.R.; POKROVSKAYA, T.V.; BAGDASARYAN, A.B.; ORLOVA, V.V.; RUBINSHTEYN, Ye.S., professor; MILEVSKIY, V.Yu.; SHCHERBAKOVA, Ye.Ya.; BOCHKOV, A.P.; ANAPOL'SKAYA, L.Ye.; DUNAYEVA, A.V.; UTESHEV, A.S.; RUDNEVA, A.V.; RUDENKO, A.I.; ZOLOTAREV, M.A.; NERSESYAN, A.G.; MIKHAYLOV, A.N.; GAVRILOV, V.A.; TSOMAYA, T.I.; DEVYATKOVA, A.M.; ZAVARINA, M.V.; SHMETER, S.M.; BUDYKO, M.I., professor.

Discussion of the report (in the form of debates) [of the current state climatological research and methods of developing it]. Inform. sbor.GUGMS no.3/4:26-154 '54. (MIRA 8:3)

1. Chlen-korrespondent Akademii nauk SSSR (for Fedorov). 2. Glavnaya geofizicheskaya observatoriya im. A.I.Voeykova (for Predtechenskiy, Lebedev, Yanishevskiy, Isayev, Rakipova, Pokrovskaya, Orlova, Rubinshteyn, Budyko, Shcherbakova, Anapol'skaya, Dunayeva, Rudneva, Gavrilov, Zavarina). 3. Ukrainskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut (for Buchinskiy).

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

FEDOROV, Ye.Ya., professor; PREDTECHENSKIY, P.P., and others.

Discussion of the report (in the form of debates) [of the current state climatological research and methods of developing it]. Inform. sbor. GUGMS no.3/4:26-134 '54. (MIRA 8:3)

(Card 2)

4. Vsesoyuznyy institut rastenievodstva (for Selyaninov, Rudenko). 5. Bioklimaticheskaya stantsiya Klelovodsk (for Boshno). 6. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (for Alisov). 7. Ministerstvo putey sooshcheniya SSSR (for Biryukov). 8. Institut geografii Akademii nauk SSSR (for Gal'tsov, Grigor'yev). 9. Geofizicheskaya komissiya Vsesoyuznogo geograficheskogo obshchestva (for Eygenson). 10. Ministerstvo elektrostantsiy i elektropromyshlennosti SSSR (for Muretov). 11. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova (for Khromov). 12. TSentral'nyy nauchno-issledovatel'skiy gidrometeorologicheskiy arkhiv (for Sokolov, Zolotarev). 13. Gosudarstvennyy okeanograficheskiy institut (for Samoylenko). 14. TSentral'nyy institut prognozov (for Usmanov, Sapozhnikova). 15. Institut geografii Akademii nauk SSSR i TSentral'nyy institut kurortologii (for Chubukov). 16. Nauchno-issledovatel'skiy institut imeni Sechenova, Yalta (for Trotsenko). 17. Arkticheskiy nauchno-issledovatel'skiy institut (for Vangengeym).

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

FEDOROV, Ye.Ye., professor; PREDTECHENSKIY, P.P., and others.

Discussion of the report (in the form of debates) [of the current state of climatological research and methods of developing it]. Inform.sbor. GUGMS no.3/4:24-154 '54. (Card 3) (MIRA 8:3)

18. Dal'nevostochnyy nauchno-issledovatel'skiy gidrometeorologicheskiy institut (for Sokolov). 19. Institut geologii i geografii Akademii nauk Litovskoy SSR (for Styra). 20. Rostovskoe upravlenie gidrometsluzhby (for Temnikova). 21. Morskoy gidrofizicheskiy Institut Akademii nauk SSSR (for Dmitriyev). 22. Vsesoyuznyy institut rasteniyevodstva (for Malyugin). 23. Akademiya nauk Estonskoy SSR (for Liedemaa). 24. Akademiya nauk Armyanskoy SSR (for Bagdasaryan). 25. Leningradskiy gidrometeorologicheskiy institut (for Milevskiy).
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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

FEDOROV, Ye.Ye., professor; PREDTECHENSKIY, P.P., and others.

Discussion of the reports (in the form of debates) [of the current state climatological research and methods of developing it]. Inform.sbor. GUGMS no.3/4:26-154 '54. (Card 4) (MLRA 8:3)

26. Gosudarstvennyy gidrologicheskiy institut (for Bochkov). 27. Kazakhskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut (for Uteshev). 28. Upravlenie gidrometsluzhby Armyanskoy SSR (for Nersesyan). 29. Leningradskoye upravleniye gidrometsluzhby (for Mikhaylov, Devyatkova). 30. Tbilisskiy gosudarstvennyy universitet (for Tsomaya). 31. TSentral'naya aerologicheskaya observatoriya (for Shmeter).
(Climatology)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

124-58-9-10067

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 90 (USSR)

AUTHOR: Shmeter, S.M.

TITLE: Random Errors in the Measurement of the Air Temperature and Pressure in the Free Atmosphere by Means of Commutator-switch Type Radiosondes (Sluchaynyye oshibki izmereniya temperatury i davleniya vozdukha v svobodnoy atmosfere s pomoshch'yu greben-chatykh radiozondov)

PERIODICAL: Tr. Tsentr. aerolog. observ., 1954, Nr 13, pp 46-59

ABSTRACT: A description of the methodology and results of laboratory and field investigations of the random errors incurred in measurements of the pressure and temperature in the free atmosphere by means of propeller-driven pulse-transmitting, commutator-switch-type radiosondes RZ-043M and RZ-049. In either type of radiosonde the magnitude of the random errors in the determination of the pressure and the elevation are virtually identical; errors in the temperature measurement for the RZ-049 appeared to be somewhat smaller than for the RZ-043M. In general, the errors increase with elevation. For the radiosonde RZ-049 the magnitude of the probable random errors in the temperature measurements does not exceed 0.4° for the lower troposphere and 0.7°

Card 1/2

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124-58-9-10067

Random Errors in the Measurement of the Air Temperature (cont.)

for elevations of the order of 16 km. The magnitude of the probable random error in pressure measurements is limited by an absolute value of 4 mb at all elevations up to 16 km.

V. S. Khokhalin

1. Air--Temperature 2. Temperature--Measurement 3. Air--Pressure
4. Pressure--Measurement 5. Radiosondes--Applications

Card 2/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

124-58-9-10066

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 90 (USSR)

AUTHOR: Shmeter. S. M.

TITLE: Inertial Errors in the Measurement of Air Temperature by Means of Radiosondes (Inertsionnyye oshibki v izmerenii temperatury vozdukha s pomoshch'yu radiozondov)

PERIODICAL: Tr. Tsentr. aerol. observ., 1954, Nr 13, pp 60-73

ABSTRACT: Upon examination of the physical meaning of the concept of an "inertial error" and derivation of a calculation formula therefor based on the hydrodynamic theory of heat exchange, it is shown that the inertial errors encountered in RAOBS are large in comparison with the errors incurred in aircraft-meteorograph soundings and that they become even more pronounced in the presence of intense temperature inversions in the free atmosphere. Laboratory tests with radiosondes RZ-043M and RZ-049 are described; the latter model is the current standard observational-network instrument throughout the USSR. It is established that for the usual density of the surface air and the usual speed of the ventilating flow, which is 5 m/sec, the inertia coefficient for the RZ-043M is 0. 32 min and for the RZ-049 0. 24 min. In the

Card 1/2

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Inertial Errors in the Measurement of Air Temperature (cont.)

conclusions it is noted that the inertia coefficient is inversely proportional to the heat-transfer coefficient, that it decreases with elevation, and that the relationship of the inertia coefficient with the rate of climb of the radiosonde is consistent with the relationship between that quantity and the air density. The aboveindicated laws governing the changes of the radiosonde-inertia coefficients permit in a number of cases the determination of corrections which serve to refine the results of radiosonde observations.

V. S. Khokhalin

1. Air--Temperature 2. Temperature--Measurement 3. Radiosondes--Applications
4. Heat transfer--Theory

Card 2/2

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SHMETER, S. M. POKROVSKIY, V. I.

"Radiation Errors of the Bomb-Type Radiosonde," Trudy TsAO No 14, 1955

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SHMETER, S.M.; SHUR, G.N.

Electrometeorograph for observations by airplanes. Trudy TSAO no.22: 3-8 '57. (MIRA 11:4)
(Meteorological instruments) (Aeronautics in meteorology)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMETER, S.M.

Motion of sounding balloons in accelerated air currents. Trudy TSAO no.22:17-21 '57. (MIRA 11:4)

(Balloons, Sounding)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMETER, S.M.

Accuracy in calculating Richardson numbers using data for winds from pilot-balloon observations. Trudy TSAO no.22:32-34 '57.(MIRA 11:4)
(Atmosphere, Upper)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

PINUS, N.Z.; SHMETER, S.M.

Some characteristics of atmospheric turbulence over mountain regions. Trudy TSAO no.24:3-11 '58. (MIRA 12:1)
(Atmospheric turbulence)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMETER, S.M.

Passage of air currents around mountains. Trudy TSAO no.24:16-31 '58. (MIRA 12:1)
(Winds) (Mountains)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

34126

S/124/62/000/001/030/046
D237/D304

3,5140

AUTHORS: Pinus, N. Z., and Shmeter, S. M.

TITLE: Results of investigating atmospheric turbulence in the Central Aerological Observatory

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 1, 1962, 95, abstract 1B653 (Tr. Tsentr. aerol. observ., 1959, no. 26, 6-16)

TEXT: The results are presented of investigations of wind changes at various altitudes, structure of air streams, turbulent oscillations of various sizes, upward motion over plain and mountainous regions and stream regions, performed at the Central Aerological Observatory together with other scientific and experimental establishments during the last few years. Of many conclusions appearing in the work, the following are given here:
(1) Mean quadratic variance of the horizontal component of the wind velocity vector over the time intervals up to 12 hours is

Card 1/2

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Results of investigating...

higher: (a) in the colder half-year; (b) in latitudes moderate in comparison with the South of the USSR. The maximum is reached near the tropopause. (2) Velocity of vertical streams (w) in 80% of cases maintains its sign over a 2 - 3 min. period. Momentary values of w reached 50 cm/sec. in 80% of flights. The character of distribution of w with the amplitude depends on the general synoptic process and on the local conditions. (3) The number and magnitude of the overloads both increase with increase of the intensity of turbulence. Zones of turbulence appearing most often are those of a thickness of 300 - 600 m. (4) Advection of cold favors the development of turbulence of oscillations of dimensions comparable with dimensions of airplanes. (5) Rough air in the vicinity of mountain ridges is determined by the character of streamlining. 30 references.
[Abstracter's note: Complete translation.]

Card 2/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

PAKHOMOV, L.A.; SHAFTER, S.M.; SHUR, G.N.

The improved EM TSAO airplane electrometeorograph. Trudy TSAO no.31:64-73 '59. (MIRA 12:9)
(Meteorological instruments)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

RESHETOV, Vadim Dmitriyevich; SHMETER, S.M., otv.red.; BLINNIKOV, L.V., red.; ZARKH, I.M., tekhn.red.

[Ageostrophic deviations of wind and astatic phenomena in the atmosphere] Otkloneniia vetra ot gradientnogo i iavleniia nestatichnosti v atmosfere. Moskva, Gidrometeor.izd-vo, 1960. 93 p. (MIRA 13:10)

(Winds)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

PAKHOMOV, Leonid Afanas'yevich; PINUS, Naum Zinov'yevich; SHMETER, Solomon Moiseyevich; KORNILENKO, V.S., red.; ZARKH, I.M., tekhn.red.

[Aerological research on the variability of the atmospheric refraction coefficient for ultrashort radio waves] Aerologicheskie issledovaniia izmenchivosti koeffitsienta prelomleniia atmosfery dlia ul'trakorotkikh radiovoln. Moskva, Gidrometeor. izd-vo, 1960. 101 p. (MIRA 14:1)
(Microwaves) (Refraction)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

S/124/62/000/001/033/046
D237/D304

AUTHOR: Shmeter, S. M.

TITLE: Turbulence in the clouds of the upper troposphere

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 1, 1962, 96, abstract 1B661 (Tr. Tsentr. aerol. observ., 1960, no. 34, 52-58)

TEXT: Some results are considered of experimental investigations into bumping of airplanes within the clouds at altitudes of 8 - 13 km. The materials used were obtained during experimental test-flights under the auspices of the Central Aerological Observatory and State NII GVF on the plane ТУ-104 (TU-104) in August and September, 1959, in East Siberia and in the Far East. Pressure and temperature variations of air were recorded by means of the electrometeorograph ЭМ-ЦАО (EM-TsAO) installed in the plane together with turbulence recorders. During the flights,

Card 1/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMETER, S.M.

High cumulus clouds. Trudy TSAO no.35:3-20 '60. (MIRA 13:11)
(Cloud physics)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMETER, S. M.

3

PHASE I BOOK EXPLOITATION SOV/5852

Borovikov, Aleksandr Moiseyevich, Ivan Ivanovich Gayvoronskiy, Yelizaveta Germanovna Zak, Vadim Vladimirovich Kostarev, Il' ya Pavlovich Mazin, Vladislav Yevgen' yevich Minervin, Aleksandr Khristoforovich Khrgian, and Solomon Moiseyevich Shmeter

Fizika oblakov (Cloud Physics) Leningrad, Gidrometeoizdat, 1961. 458 p. 5000 copies printed.

Ed. (Title page): A. Kh. Khrgian; Ed.: V. S. Protopopov; Tech. Ed.: M. I. Braynina and O. G. Vladimirov.

PURPOSE: This book is intended for meteorologists and for specialists in forecasting service and aviation.

COVERAGE: The book describes modern methods of studying the development, structure and origin of clouds. Special attention has been given to the forma-

Card 1/10

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tion of microscopic elements in clouds. The macroscopic properties of clouds are also studied in detail. Their position in space, motion, as well as their connection with thermodynamic structure of the atmosphere, general circulation, cyclonic activity, etc. are investigated. Flying in clouds is briefly discussed. One chapter deals with cloud modification and seeding. The book is based on Soviet and non-Soviet sources. Ch. I was written by Ye. G. Zak and I. P. Mazin; Ch. II, by A. M. Borovikov, V. Ye. Minervin, A. Kh. Khrgian and S. M. Shmeter; Ch. III, V, and VI, by A. Kh. Khrgian; Ch. IV, by A. Kh. Khrgian and S. M. Shmeter; Ch. VII, by Ye. G. Zak; Ch. VIII, by A. M. Borovikov; Ch. IX, by I. P. Mazin; Ch. X, by I. I. Gayvoronskiy; Ch. XI, by V. V. Kostarev, V. Ye. Minervin and A. Kh. Khrgian. The authors thank L. T. Matveyev and A. M. Baranov. There are 632 references: 274 English, 254 Soviet, 71 German, 30 French, 2 Hungarian and 1 Polish.

Card 2/10

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

KALINOVSKIY, Aleksandr Boleslavovich; PINUS, Naum Zinov'yevich. Prinimal uchastiye ~~SIMETER, S.N.;~~ STEPANENKO, V.D., otv. red.; ZABRODSKIY, G.M., otv. red.; VLASOVA, Yu.V., red.; BRAYNINA, M.I., tekhn. red.

[Aerology] Aerologiia. Leningrad, Gidrometeor. izd-vo. Pt.1. [Methods of aerological measurements] Metody aerologicheskikh izmerenii. 1961. 517 p. (MIRA 15:2)
(Meteorology—Observations)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMETER, S.M.

Features of a wind field on the edges of Cb capillatus. Meteor. i gidrol. no.11:20-27 N '62. (MIRA 15:12)

1. TSentral'naya aerologicheskaya observatoriya.
(Winds)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

PHASE I BOOK EXPLOITATION SOV/6115

Pinus, N. Z., ed.

Atmosfernaya turbulentnost', vyzyvayushchaya boltanku samoletov (Atmospheric Turbulence Causing Airplane Bumps). Moscow, Gidrometeoizdat, 1962. 166 p. Errata slip inserted. 1400 copies printed.

Sponsoring Agency: Glavnoye upravleniye gidrometeorologicheskoy sluzhby pri Sovete Ministrov SSSR. Tsentral'naya aerologicheskaya observatoriya. Ed.: L. V. Blinnikov; Tech. Ed.: I. M. Zarkh.

PURPOSE: The book is intended for meteorological and aerodynamics specialists and for persons connected with the organization and supervision of aircraft flights.

COVERAGE: This book describes the effect of turbulent air on the stability of an aircraft in flight.

Card 1/4

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

Atmospheric Turbulence Causing Airplane Bumps SOV/6115

TABLE OF CONTENTS [Abridged]:

PART I. PINUS, N. Z., AND S. M. SHMETER. TURBULENT AIR AFFECTING AIRCRAFT FLIGHT

Foreword		3
Ch. I.	Some Aspects of the Theory of Free Air Turbulence	5
Ch. II.	Turbulence Causing Bumping of Aircraft	35
Ch. III.	Turbulence in Jet Streams	57
Ch. IV.	Physical and Meteorological Characteristics of Cumulonimbus Clouds	78
Ch. V.	Vertical Motion and Turbulence in Cumulonimbus and Cirrus Clouds	97

Card 2/4

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

Atmospheric Turbulence Causing Airplane Bumps SOV/6115

Bibliography 115

PART II. RESHETOV, V. D. THE PHYSICAL BASIS FOR CHANGE IN THE LIFT OF AN AIRFOIL IN A VARIABLE LIGHT TURBULENT FLOW AND MODEL OF TURBULENT AIR CAUSING BUMPING OF AIRCRAFT. 121

This section (pp. 121-164) describes the theory of gust loads and bumping, the relation of lift to the intensity of light turbulence, the effect on aircraft of passage from a laminar flow zone to a turbulent zone and back, and the relationship between the intensity of bumping and atmospheric zones.

Results 161

Conclusions 163

Card 3/4

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

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Atmospheric Turbulence Causing Airplane Bumps SOV/6115

Bibliography 164

AVAILABLE: Library of Congress

SUBJECT: Aerospace

Card 4/4 AD/dk/jw
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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SIBIETER, S.M.; RESHCHIKOVA, A.A.; SILAYEVA, V.I.; VORONOVA, I.P.

Characteristics of the horizontal temperature distribution in a zone of cumulonimbus clouds. Trudy TsAO no.53:79-90 '63.
(MIRA 17:10)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

Shmeter, S.M.

AID Nr. 981-3 3 June

CONFERENCE AT CENTRAL AEROLOGICAL OBSERVATORY (USSR)

Meteorologiya i gidrologiya, no. 3, 1963, 60. S/050/63/000/004/002/002

The following are among the reports presented at a recent session of the Scientific Council of the Central Aerological Observatory: 1) N. Z. Pinus -- an experimental investigation of the wind field at altitudes of 7 to 11 km, certain peculiarities of the mesostructure of the wind field, and the statistical characteristics of horizontal and veritical wind fluctuations in the jet stream zone in different regions of the European USSR and Siberia; 2) S. M. Shmeter -- the process of cumulonimbus cloud development and a proposed model of the structure of the fields of meteorological elements near the upper third of such clouds at different stages of development; 3) V. D. Reshetov -- the use of hydrodynamic equations for determining the interdependence of ageostrophic, nonstatic, and nonstationary atmospheric motions and a more

Card 1/2

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AID Nr. 981-3 3 June

CONFERENCE AT CENTRAL AEROLOGICAL [Cont'd] S/050/63/000/004/002/002

accurate form proposed for writing such equations; 4) I. F. Kvaratskheliya -- conditions for the formation of sharp changes of vertical wind shear in the upper half of the troposphere over the Transcaucasus; 5) A. I. Ivanovskiy and A. I. Repnev -- the hydrodynamics of the upper atmosphere, taking into account the chemical reactions occurring under solar influence; 6) V. V. Kostarev, A. M. Borovikov, and A. B. Shupyatskiy -- certain radar criteria for identifying the hail content of clouds and criteria for evaluating the effect of cloud modification; and 7) A. G. Gorelik -- certain results of radar investigations of the wind field at altitudes of 50 to 700 m. [ET]

Card 2/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

ACCESSION NR: AT4011396 S/2789/63/000/047/0055/0062

AUTHOR: Reshchikova, A. A.; Silayeva, V. I.; Shmeter, S. M.

TITLE: Growth of cumulonimbus clouds and characteristics of the temperature field above them in the upper troposphere and in the tropopause zone

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy*, no. 47, 1963. Fizika oblakov, 55-62

TOPIC TAGS: meteorology, atmospheric convection, cloud, cumulonimbus cloud, tropopause, troposphere, temperature field, upper troposphere, air temperature, stratosphere, lower stratosphere

ABSTRACT: An investigation of the fields of meteorological elements near the upper part of 94 cumulonimbus clouds was made by the Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory) in 1959-1961. A TU-104 flying laboratory was used; it carried an electrometeorograph, apparatus for measurement of turbulence and a Doppler set for determination of wind velocity and direction. The flights were made in the Soviet Far East and European Russia. Emphasis is on the rate of growth of cumulonimbus clouds at heights of 8-12 km. At the time of strong convection these clouds can penetrate into the tropopause layer and even into the lower stratosphere. In the tropopause zone the rate of growth of clouds

Card 1/2

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sometimes exceeds 1 meter/second. Air temperature directly over the tops of cumulonimbus can differ by several degrees from its values in the zone outside the clouds. The temperature is lower over growing clouds than in the surrounding atmosphere but over cumulonimbus whose growth is terminating the temperature is higher than in the surrounding atmosphere. Typical examples of these changes are shown in Enclosures. Orig. art. has: 3 figures and 4 tables.

ASSOCIATION: TSENTRAL'NAYA AEROLOGICHESKAYA OBSERVATORIYA (Central Aerological Observatory)

SUBMITTED: 00	DATE ACQ: 24Feb64	ENCL: 03
SUB CODE: AS	NO REF SOV: 003	OTHER: 003

Card 2/5

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

ACCESSION NR: AT4045515 S/2789/64/000/053/0054/0078

AUTHOR: Shmeter, S. M.

TITLE: Stages of development of cumulonimbus clouds and characteristics of the distribution of meteorological parameters in the cloud zone

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy*, no. 53, 1964. Dinamika atmosfery* (Atmospheric dynamics), 54-78

TOPIC TAGS: meteorology, cloud dynamics, cloud, cumulonimbus cloud, cloud turbulence, atmospheric turbulence

ABSTRACT: Data are presented on the structure of the fields of temperature, wind, vertical movements and turbulence in a zone of cumulus clouds at different stages of their development. It is shown that each of these stages corresponds to a specific character of distribution of meteorological elements in the cloud zone. The lifetime of cumulonimbus clouds can be divided into stages of growth, maturity and dissipation. Each of these stages corresponds to a specific variety of Cb. The character of distribution of temperature, wind, vertical movements, turbulence and other atmospheric characteristics in a Cb zone is dependent on the stage of cloud development. Cumulonimbus clouds in the stage of active development always have the form Cb calv. In this period the mean rate of growth of their tops (W) is

Card 1/3

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usually 0.2-0.5 m/sec, in some cases up to 2 m/sec, although in certain intervals of time W can considerably exceed this value. The upward growth of Cb calv is almost never accompanied by an expansion of the top. The rate of change of its linear dimensions rarely exceeds 0.6 km/min. In individual cases in a period of growth of Cb calv there is even a decrease in the diameter of the top, apparently associated with its erosion. With a transition to the mature stage there is a rapid horizontal spread of the cloud top with a velocity up to 1.2-1.6 km/min. At the same time the velocity of upward cloud development is decreased by a factor of several times. A cumulonimbus cloud passes into the form Cb calv - Cb inc, characterized by the presence of individual domelike formations above the anvil. At the end of the mature stage of development the dome above the anvil becomes flat, the cloud assumes the form Cb inc and upward growth stops. In the stage of dissipation cumulonimbus clouds most commonly have the form Cb inc. They settle with a velocity attaining 1 m/sec. The total or partial dissipation of the liquid-drop part of Cb precedes the settling of the top. Horizontal spread of the cloud top ceases and the diameter of the upper part of Cb gradually decreases due to the evaporation of crystals. If Cb have small horizontal dimensions, the intensity of convection is small, the wind in the atmosphere is weak and its horizontal gradients are small, transition of a cloud into the mature stage occurs without formation of an anvil. In this case the cloud maintains the form Cb calv in all three stages. Within the tops of cumulonimbus clouds there are zones with a width of from 200 m to 1.5-2 km

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within which the air is in a state of permanent rising or descent with a velocity attaining 20-30 m/sec. Within Cb calv ascending currents predominate. In Cb calv - Cb inc there are local zones with ascending and descending movements. In Cb inc, especially in the dissipation stage, the air is descending almost everywhere. The air temperature within ascending and descending currents differs from its value outside them. In growing clouds the ascending currents are most frequently warmer than the surrounding air. Descending currents in all stages of development of Cb, and ascending currents in the mature stage, are usually cold. Ascending currents are observed over the tops of Cb calv and the domes of Cb calv-Cb inc (in 72% of all cases). Descending air with a velocity of 4-6 m/sec is almost always observed along the lateral boundaries of Cb. Ascending movements are observed only near Cb calv in a narrow zone directly adjacent to the cloud boundary. The abovementioned facts represent only part of the numerous conclusions presented. "The author wishes to thank M. M. Kulik, V. S. Aleksandrov and A. F. Yepishev, specialists at the GosNII GVF, and test pilot A. A. Krestenko, without whose assistance this work could not have been done." Orig. art. has: 7 figures and 9 tables.

ASSOCIATION: Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory)

SUBMITTED: 00 ENCL: 00 SUB CODE: ES

Card 3/3 NO REF SOV: 008 OTHER: 007

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

ACCESSION NR: AT4045516 S/2789/64/000/053/0091/0100

AUTHOR: Reshchikova, A.A., Silayeva, V.I., Shmeter, S.M.

TITLE: Turbulence causing aircraft bumping in a zone of cumulonimbus clouds

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy*, no. 53, 1964. Dinamika atmosfery* (Atmospheric dynamics), 91-100

TOPIC TAGS: meteorology, atmospheric turbulence, aircraft turbulence, cloud, cumulus cloud, cumulonimbus cloud, aviation meteorology

ABSTRACT: On the basis of data obtained in special flight investigations of atmospheric turbulence causing the bumping of aircraft in a zone of Cb clouds the authors present data on the frequency and intensity of bumping (aircraft turbulence) of jet aircraft near the tops of Cb and to some extent within them. They discuss the effect of wind flow around Cb on the structure of zones of aircraft turbulence near these clouds. The following conclusions are drawn: 1. Within the tops of Cb, in the layer up to 500 m beneath their upper boundary, aircraft turbulence of some duration is virtually always observed. In clouds which have ceased their upward growth the intensity of such turbulence is not

Card 1/3

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more moderate. Only in extremely rare cases is the overload increment as much as 0.5-0.8 g. In the tops of upward developing clouds the turbulence is manifested as sharp upward and downward thrusts. The intensity of bumping can be very strong with overload increments reaching up to $\pm$ 1g and even somewhat greater. 2. During flight within the tops of growing Cb an aircraft experiences transverse horizontal overloads which "shove" it from side to side. In many cases there is also a long-period "pitching". 3. Flight over Cb at a distance of more than 200 m above the cloud boundary are virtually free of turbulence. 4. Over Cb, turbulent zones are encountered in the direction of the wind vector more frequently than over sectors situated perpendicular to the wind. These zones are situated not only over the cloud, but also extend 5-10 km to one side. The horizontal extent of turbulent zones is 33-50% smaller alongside developing clouds than alongside fully developed clouds. 5. In approximately 80% of the cases the turbulent zones over Cb are continuous, but in 20% of the cases they have a discontinuous character, with calm zones between the turbulent sectors. The latter is observed only alongside Cb calv and Cb calv - Cb inc. 6. The turbulent zones near the upper third of Cb are sometimes asymmetrical relative to the direction of the wind vector. On the leeward side of

Card 2/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

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the cloud these zones are more elongated horizontally and the intensity of turbulence is maximum. In many cases (especially beyond the leeward boundary of Cb), there is a second region of high turbulence at a distance of several kilometers from the turbulent zone adjacent to the cloud. This region can persist for 15-20 minutes, almost without changing in size of intensity. "In conclusion, the authors wish to thank M.M. Kulik and V.S. Aleksandrov, their colleagues at the GosNII GVF, for organizing and carrying out the aircraft investigations." Orig. art. has: 2 figures and 5 tables.

ASSOCIATION: Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory)

SUBMITTED: 00 ENCL: 00 SUB CODE: ES

NO REF SOV: 004 OTHER: 001

Card 3/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

RESHCHIKOVA, A.A.; SILAYEVA, V.I.; SHMETER, S.M.

Growth of cumulonimbus and the characteristics of the overlying temperature field in the upper troposphere and in the troponause zone. Trudy TSAO no.47:55-62 '63. (MIRA 16:12)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

CHISTYAKOV, A.D.; PUSKOVA, M.V.; ORLOVA, Ye.M.; GLAZOVA, O.P.; PED', L.A.; GELYAND, M.Ye.; ABRAMOVICH, K.G.; POPOVA, T.P.; MATVEYEV, L.T.; BACHURINA, A.A.; LEBEDEVA, N.V.; PESKOV, B.Ye.; ROMANOV, N.N.; VOLEVAKHA, N.M.; PCHELKO, I.G.; PETRENKO, N.V.; KOSHELENKO, I.V.; PINUS, N.Z.; SHMETER, S.M.; MATVEYEVA, T.F.; MININA, L.S.; BEL'SKAYA, N.N., nauchn. red.; ZVEREVA, N.I., nauchn. red.; KURGANSKAYA, V.M., nauchn. red.; MERTSALOVA, A.N., nauchn. red.; TOMASHEVICH, L.V., nauchn. red.; SAGATOVSKIY, N.V., otv. red.; MALIKOVSKAYA, A.B., red.

[Manual of short-range weather forecasting] Rukovodstvo po kratkosrochnym prognozam pogody. Leningrad, Gidrometeoizdat. Pt.2. Izd.2. 1965. 491 p. (MIRA 18:8)

1. Moscow. TSentral'nyy institut prognozov.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

PINUS, Naum Tsvi'yavich; SHMETER, Solomon Moiseyevich; [illegible]'YEV, K.Ya., otv. red.; BELEN'KAYA, L.I., red.

[Aerology] Aerologiia. Leningrad, Gidrometeoizdat. Pt.2. 1965. 350 p. (MIRA 18:11)

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Pinus, Naum Zinov'yevich; Shmeter, Solomon Moiseyevich

Aerology. pt. 2: Physics of the free atmosphere (Aerologiya. ch. 2: Fizika svobodnoy atmosfery) Leningrad, Gidrometeoizdat, 1965. 230 p. illus., biblio. 5000 copies printed.

TOPIC TAGS: atmospheric physics, atmospheric circulation, cloud cover, aerothermodynamics, aeromechanics

PURPOSE AND COVERAGE: This monograph is Part II of the textbook by A. B. Kalinovskiy and N. Z. Pinus, entitled Aerology, Physics of the free atmosphere, which gives a systematic outline of contemporary data on the composition of air and its changes with altitude, on radiation and the heat balance of the upper atmosphere, on space and time changes of atmospheric pressure and air density, on the dynamics of the atmosphere and turbulent motion, on clouds at various altitudes and on cloud modification methods. The book is intended as a textbook for students of hydrometeorological institutes and universities. It will also be useful to specialists in the field of atmospheric physics, aviation, rocketry, etc.

TABLE OF CONTENTS [abridged]:

Foreword -- 3

Card 1/2 UDC: 551.510.536

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

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Introduction -- 5
Ch. I. Gaseous composition of the earth's atmosphere -- 11
Ch. II. Radiation regime of the free atmosphere -- 53
Ch. III. Thermal regime of the free atmosphere -- 75
Ch. IV. Air pressure and density at various altitudes -- 119
Ch. V. Air currents in the free atmosphere -- 135
Ch. VI. Structure of air currents -- 162
Ch. VII. General atmospheric circulation. Jet streams -- 208
Ch. VIII. Clouds -- 240
Ch. IX. Cloud modification -- 321
References -- 339

SUB CODE: 04/ SUBM DATE: 01Sep65/ ORIG REF: 172/ OTH REF: 039

Card 2/2 FW

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

ACC NR: AP6034029 SOURCE CODE: UR/0050/66/000/010/0007/0013

AUTHORS: Shmeter, S. M. (Candidate of physico-mathematical sciences); Silayeva, V. I.

ORG: Central Aerological Observatory (Tsentral'naya aerologicheskaya observatoriya)

TITLE: Vertical currents within cumulonimbus clouds

SOURCE: Meteorologiya i gidrologiya, no. 10, 1966, 7-13

TOPIC TAGS: atmospheric cloud, atmospheric turbulence, air mass

ABSTRACT: During the interval 1959-65, the TsAO, jointly with GosNIIGA and GGO, made a study of the temperature, wind, and vertical-movement fields in the Cb zone. A TU-104B airplane, set up as a laboratory with special apparatus, was used to make 698 series of measurements in 294 different Cb cloud zones. Most flights were made at heights from 7 to 11 km, and most turns were made several hundred meters within the cloud, maximum penetration being about 1000 m. The vertical component of air velocity was computed by means of data supplied from measurements of overloading and shift of the plane's center of gravity. The most intense vertical movements were most frequently observed near the center of the cloud (laterally) and between the center and the top (vertically). Downdrafts were found to be 20—30% weaker than updrafts at all stages of cloud development. No more than 10—12 zones of large-scale downdrafts were generally observed, and these occupied no more than 30—50% of the total

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

ACC NR AP6034768 SOURCE CODE: UR/0362/66/002/010/1026/1032

AUTHOR: Shmeter, S. M.

ORG: Central Aerological Observatory (Tsentral'naya aerologicheskaya observatoriya)

TITLE: Interaction of cumulonimbus clouds with the wind field

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 10, 1966, 1026-1032

TOPIC TAGS: atmospheric wind field, ~~cumulonimbus~~ atmospheric cloud, atmospheric mesometeorology, dynamic meteorology, atmospheric turbulence, wind velocity, cloud physics

ABSTRACT: The mesostructure of the wind field, vertical air currents, temperatures, and turbulence near and inside cumulonimbus clouds (Cb) were investigated in 1959-1965 at heights of 3—12 km from a specially equipped Tu-104B airplane. Personnel from the Central Aerological Observatory, the GosNIIGA, the State Geophysical Observatory, and the Central Institute of Forecasts participated in the work. Wind directions and speeds were measured with airborne Doppler equipment. Vertical wind gusts were computed from data on

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accelerations and changes in the pitch of the airplane, which was equipped with thermographs and barographs, electric field strength recorders, radar, and other instruments. Visual observations were supplemented photographically and by radar scope. A total of 698 series of measurements were taken in and near 294 cumulonimbus clouds at heights of 1.5—12 km over European USSR, the Soviet Far East, and Central Asia. About 30% were storm clouds and the others produced showers. This article deals with the interaction of these clouds with the surrounding atmosphere, and problems that relate to the development of convection near such clouds.

Empirical data showed that a marked difference exists between the value of the vertical wind velocity gradient inside clouds more than 10 km across and that outside the clouds; on the average, the ratio is 0.3—0.7. Changes in the wind speed and direction near such clouds as compared with values far away from the clouds are noticeable at distances 1—1.5 times the diameter of the cloud and in a layer 500—1000 m above. It was found that the change in speed near the top of a Cb cloud reached 10—15 m/sec at times and the difference in direction 40—50°. The few wind measurements taken near cloud bases indicated that changes in wind speeds and directions were about the same as above the clouds.

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ACC NR: AP6034768

An analysis of data from measurements taken in 50 passes across the tops of Cb clouds showed that, other conditions being equal, the absolute values of wind speeds and directions increased with increasing vertical wind gradients in the surrounding atmosphere, the turbulence coefficient k, and the mean velocity of medium-scale (convective) vertical currents inside cumulonimbus clouds.

Wind speeds usually increase near Cb clouds, at times by 1.5—2 times. The magnitude and sign of the change in wind direction differ at varying distances from the tops of Cb clouds. Radial air currents flowing into and out of Cb clouds probably play a large part in the changes in wind direction observed near Cb clouds.

The divergence of the wind (Div c) about the edges of Cb clouds was calculated from data from 43 series of measurements. The absolute value of Div c in the top third of a Cb cloud, measured in squares of 5 x 5 km, was found to vary from 4×10^{-4} to 8×10^{-2} sec^{-1}. Div c around the base of a Cb cloud was calculated for only six series of measurements, where it was found to range from 7×10^{-4} to 9×10^{-3} sec^{-1} (thus, approximately the same as near the cloud top). Thus, Div c is 100—1000 times greater near Cb clouds than in the frontal zones of nontropical cyclones.

Card 3/5

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ACC NR: AP6034768

Varying values of Div c about a cloud caused forced vertical currents of different sign where speeds are 1—2 m/sec in some regions. As a rule, rising or very slowly descending currents are observed on the windward side of Cb clouds and relatively strong descending currents on the downwind side. Rising currents in front of the cloud top and descending currents behind it produce an anomalously cold region in front of the top of a Cb cloud and an anomalously cold air region behind it. Relatively warm regions were observed behind well-developed Cb clouds and an anomalously cold region often formed behind rapidly growing incipient Cb clouds.

Since Cb clouds are surrounded by divergence and convergence zones, vertical currents of dynamic origin occur which produce fluctuations in the atmospheric pressure. The formula for computing this pressure indicates that it increases in proportion to the horizontal dimensions of a cloud and the dynamic effect is more noticeable beside large clouds (the differences in pressure Δp are about 0.2—0.5 mb). The development of convection may be strengthened or weakened by the considerable vertical pressure gradients that may be produced here.

Card 4/5

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

USSR/Farm Animals. Honey Bee. C

Abs Jour: Ref Zhur-Biol., No 20, 1958, 92672.

Author : Smetkov, M.F.
Inst : Scientific Research Institute for Apiculture.
Title : The Use of Bees for Pollination of Cucumbers in Hot Houses and Hot Beds.

Orig Pub: Byul. nauchno-tekhn. inform. N.-i. in-ta pchelovodstva, 1957, No 2, 21-24.

Abstract: To obtain cucumbers of marketing maturity, it is sufficient that each bloom be visited by 6-10 bees; and in order to obtain a greater amount of seed it is necessary to increase the number of bees to 40-50. The use of taming increased visitations to the flowers by 185.1% and the cucumber crop was increased by 73%.

Card : 1/1

99

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

MITSYK, A.; SHMEYSSER, M.

Let's start the attack with joint forces. Okhr. truda i sots. strakh. 5 no.8:8-12 Ag '62. (MIRA 15:7)

1. Predsedatel' komissii okhrany truda shakhtennogo komiteta shakhty No.5 kombinata "Vorkutugol'" (for Mitsyk). 2. Zamestitel' predsedatelya komissii sotsial'nogo strakhovaniya shakhtennogo komiteta kombinata "Vorkutugol'" (for Shmeysser).

(Vorkuta--Coal mines and mining--Hygienic aspects)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

CZECHOSLOVAKIA/Cultivated Plants - Fodder. M.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15680

Author : A. Shmid

Inst :

Title : Remarks on the Seed Sowing of Red Clover. (Zametki o posevakh klevera krasnogo na semena).

Orig Pub : Socialist. zemed., 1956, 6, No 18, 1106-1111.

Abstract : No abstract.

Card 1/1

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

MARCHENKO, V.G.; TAUBE, A.M., prof.[deceased]; NEMIROV, I.A.; SHMID, V.A.; MOROZOVSKIY, N.G., kapitan dal'nego plavaniya kontr-admiral, red.; BORISOV, V.V., red.; BALASHOVA, M.V., red.-leksikograf; BERDNIKOVA, N.D., red.-leksikograf; SAVIN, B.V., led.-leksikograf; KUZ'MIN, I.F., tekhn. red.

[English-Russian naval dictionary. Approzimately 40, 000 words and phrases]Anglo-russkii voenno-morskoi slovar'. Pod red. N.G. Morozovskogo. Okolo 40,000 slov i sochetanii. Moskva, Voenizdat 1962. 851 p. (MIRA 15:12)
(Naval art and science—Dictionaries)
(English language—Dictionaries—Russian)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

S/564/61/003/000/002/029
D258/D304

AUTHORS: Shmid, Y., Kvapil, Y., Myl, Y., and Sholts, Z. (Czechoslovak Socialist Republic)

TITLE: The influence of supersaturation on the formation of parasitic crystals

SOURCE: Akademiya nauk SSSR. Institut kristallografii. Rost kristallov, v. 3, 1961, 273-277

TEXT: This paper is the first of a series concerned with the factors influencing crystal growth, especially in chemical technological processes. The authors determined the lower limit of the metastable region for the supersaturated solutions of monoammonium phosphate (MAP), dipotassium (d)-tartrate (DPT), potassium alum, and Seignette's salt. This limit was set in a dynamic process by recording the solution temperature at which the first crystals were formed. The temperature of saturation was read at the time at which the neighborhood of the first formed crystal was optically homogeneous. The apparatus is shown in Fig. 1. A

Card 1/6

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The influence of...

powerful light source situated opposite the observing stereo-microscope emits parallel rays across the plexiglass container. Another light source, at 90° from the first one, illuminates a small section of the bottom and traps each crystal as it comes down. The microscope is simultaneously focused onto the illuminated part of the bottom and on part of the parallel rays. Salts of analytical grade were used and the results checked against those obtained with optically pure solutions. The latter were made by partly dissolving crystals with the aid of steam, draining the resulting solution, and then distilling water into the container in order to dissolve the remainder of the crystals. This final solution, saturated at 55°C, remained stable for 20 hours at 0°C. The lower limit of the metastable region was found to be a function of overheating. Lowered curves of temperature v. concentration resulted for increasingly higher overheating. These curves were approximately parallel with the curve of solubility for overheating periods of 1 hour. Thus, when overheating by 30°C, the temperature of crystallization of DPT was lowered by 10°C and that of MAP by 15°C; that of Seignette's salt was lowered by 18°C and that of potassium alum by 30°C. There are 6 figures and 9

Card 2/ 3

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The influence of...

references: 1 Soviet-bloc and 8 non-Soviet-bloc. The references to the English-language publications read as follows: R. P. Rastogi, J. Amer. Chem. Soc., 3129, 1952; B. S. Strikantan, J. Indian Chem. Soc., 29, 674, 1952; A. Seidell, Solubilities, I. N. Y., 1953, p. 101; Huai Ting Hsü, L. Warren, McCabe, Ind. Engng. Chem., 26, 1201, 1934.

ASSOCIATION: Department of Physical Chemistry, Chemical Technological College, Pardubice; Institute of Mineral Research

Card 3/

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

UZHOKI, M. [Uzsoky, M.]; SHMIDEG, I. [Shmideg, I.]

Cross talk in pulse-position modulation systems. Acta techn Hung 42 no.1/3:79-84 '63.

1. Budapeshtskiy zavod tekhniki svyazi.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

L 45[illegible]-66 EWP(j)/T IJP(c) RM

ACC NR: AP6033605 SOURCE CODE: CZ/0043/66/000/001/0043/0054

AUTHOR: Simek, Ivan--Shimek, T. (Engineer; Candidate of sciences; Bratislava); Smid, Jaroslav--Shmid, Ya. (Engineer; Bratislava) 32 B

ORG: [Simek] Department of Organic Technology, Slovak Technical University, Bratislava (Katedra organickej technologie Slovenskej vysokej skoly technickej); [Smid] Slovak Petroleum n.p., Bratislava (Slovnaft, n.p.)

TITLE: Influence of atacticity and crystallinity upon the dynamic and mechanical properties of polypropylene

SOURCE: Chemicke zvesti, no. 1, 1966, 43-54

TOPIC TAGS: polypropylene plastic, crystalline polymer, mechanical property

ABSTRACT: The dynamic and mechanical properties of polypropylene determined by the method of free torsional vibrations are related to the densimetric and extraction data of polypropylene characteristic for its atacticity and crystallinity. Orig. art. has: 6 figures and 2 tables. [JPRS: 34,805]

SUB CODE: 11, 20 / SUBM DATE: 23Jul65 / ORIG REF: 003 / SOV REF: 001

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

ZISMAN, N.A., inzhener; POPOVA, N.E., inzhener; SHMIDEL', A.A., inzhener; YARTSEV, G.Ye., inzhener.

VS-3 apparatus for compositing steel circuits. Vest.sviazi 16 no.5: 5-7 Je '56. (MLRA 9:8)

(Telephone--Apparatus and supplies)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

ZISMAN, N.A., inzhener; POPOVA, N.E., inzhener; SHMIDEL', A.A., inzhener; YARTSEV, G.Ye., inzhener.

VS-3 apparatus for composing steel circuits. Vest.sviazi 16 no.7: 11-13 Jl '56. (Telegraph lines) (MLRA 9:9)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SOV/111-59-2-8/27

6(5)
AUTHOR: Muradyan, A.G., Candidate of Technical Sciences, Chief; Shmidel', A.A., Engineer, Chief Designer.

TITLE: Individual Tone Amplifier (ITU) (Individual'nyy tonal'nyy usilitel' (ITU))

PERIODICAL: Vestnik svyazi, 1959, Nr 2, pp 10-12 (USSR)

ABSTRACT: The article discusses the technical specifications of the amplifier as a whole, and describes its separate component parts. The ITU amplifier is designed to complement the SUTU type amplifier, already in use, and the two types are basically similar in respect to operating frequency range, amplifying capabilities, and possibilities for equalizing arrangements in operation, in corresponding types of circuits, although the ITU contains but one equalizer, which is changeable. The ITU is intended for use in a variety of operating conditions, and is therefore to be produced in several models: for 4-conductor cable circuits the ITU-1 (way stations) and ITU-4 (terminal stations); for connection

Card 1/4

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Individual Tone Amplifier (ITU)

into steel and copper air circuits, the ITU-2; for use in bi-metallic circuits and with PRVPM cable with conductors 1,2 mm in diameter, the ITU-3; for organization of auxiliary communications along cable circuits, the ITU-5 and ITU-6. The ITU contains equipment for induction, and tone calling. On 4-conductor circuits the tone call equipment can be used for sending distance-dialing pulses. The author describes the system provided for correction of amplitude-frequency distortion, accomplished by four different equalizing circuits in the amplifier. The amplifier element is a three-stage transistor unit, using P1V triodes in the first two stages, with grounded emitters, which circuit gives the greatest power amplification. The final stage uses a P2 with grounded base, to decrease non-linear distortion and stabilize output resistance. The author notes that the triode types P1, P2, and P3 are soon to be replaced with a sealed triode unit. Maximum output power of the amplifier is 30 mw, with less than 3% distortion at 420 cps. The ITU consumes

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Individual Tone Amplifier

240 mw of power, 15-16 times less than the tube-operated SUTU. Amplifier stabilization is discussed. The receiving unit for tone dialing and calling uses a 3-stage amplifier, a resonant system, and rectifying bridges. First and second stages of the amplifier use P1 triodes, and the third a P3B, guaranteeing sufficient power for relay operation. All 3 stages have grounded emitters. Switching to any of the three calling frequencies of 2100, 1900 or 1600 cps is provided. Relay operation band-width on any one frequency is 200 cps. The tone dial and calling circuit is designed around the P1 triode, and also provides for frequency switching. The transmission and reception of calling signals is diagrammed. There are 2 circuit diagrams and 1 block-diagram.

ASSOCIATION: Laboratoriya TsNIIS-a (TsNIIS Laboratory); OKB zavod Bashkirskogo sovnarkhoza (The OKB Plant of the Bashkir

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMIDEL', Azya Aronovich; KNAVA, Vladimir Leopol'dovich; YAKOBSON, A.Kh., red.

[Design of amplitude equalizers] Raschet amplitudnykh vyravnivatelei. Moskva, Sviaz', 1965. 119 p. (MIRA 18:4)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMIDKE, N. A.

Sbornik zadach i tema uchebnoi praktiki dlia schetovodov /Collection of problems and subjects for practical studies in bookkeeping/. Gosstatizdat, 1953.

SO: Monthly List of Russian Accessions, Vol. 7 No. 1 April 1954.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHIRYAI, V. K., LIBER, M. I. (eng.)

Welding

Automatic Flux welding of a thin-walled tare. Avtog. delo 23, no. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952.
UNCLASSIFIED.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMIDOV, F. I. i VERCHENKO I. Ya.

Sur quelques proprietes g'eom'etriques des ensembles. CR. Acad. Sci., 200- (1935), 616-618.

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A.G.,
Markushevich, A.I.
Rashevskiy, P.K.
Moscow-Leningrad, 1948

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMIDOV, F. I.

Metricheskiye kontingentsii. DAN, 39 (1943), 271-274.

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A.G.,
Markushevich, A.I.,
Rashevskiy, P.K.
Moscow-Leningrad, 1948

Physical Inst, Ul'yanovsk

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ŠMIDOV, F. I.

Math 2
13

Mathematical Reviews
Vol. 15 No. 1
Jan. 1954
Analysis

7-13-54
LL

Šmidov, F. I. On the theory of functions of two variables. Doklady Akad. Nauk SSSR (N.S.) 89, 981–982 (1953). (Russian)

The author defines the notion of a generalized semi-tangent to the graph of a real function $f(x, y)$ of two variables and uses it to strengthen as follows a classical result of Stepanov [Mat. Sbornik 32, 511–527 (1925)]: For a measurable $f(x, y)$ defined in a plane set E_0, the subset E of E_0 in which f has an approximate differential is a countable sum of sets in each of which f is Lipschitzian and for almost every (x, y) of $E_0 - E$, every ray of vertex $[x, y, f(x, y)]$ is a generalized semi-tangent to the graph of f.

L. C. Young (Madison, Wis.).

Gomel'skiy Pedagogic Inst. im V. P. Chkalov.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMIDOV, F. I.

USSR

Smidov, F. I. On the theory of the integral. Dokl. Akad. Nauk SSSR (N.S.) 101, 31–34 (1955). (Russian) MS 1-F/W 62

The author generalizes a theorem giving sufficient conditions that a real-valued function of a real variable be of generalized bounded variation. Let F be finite-valued on a bounded set E of real numbers, and call a point x a point of positive density for F if for each $r>0$ the set

$$\{y \mid |F(x)-F(y)|<r \text{ and } |x-y|<r\}$$

has x as a point of positive lower density. Theorem 1. If E' is the set of points of positive density for F, and if at each point of E', with the possible exception of a countable set E'', the function F has at least one finite approximate derivative number, then F is of generalized bounded variation in the wide sense on E' [Saks, Theory of the integral, 2nd ed., Warszawa-Lwów, 1937, has the pertinent definitions and some less general results. See Chapter VII, §10 and Chapter IX, §9.] *M. M. Day* (Urbana, Ill.).

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

AUTHOR: Shmidov, F.I. SOV/140-58-3-34/34

TITLE: ~~Functions~~ Which Satisfy the (N)-Condition of Luzin (Funktsii, udovletvoryayushchiye usloviyu (N) - Luzina)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1958, Nr 3, pp 256-258 (USSR)

ABSTRACT: A theorem referring to the N-condition from "Theory of the Integral" of Saks is proved by the author by a different method.

The notion of the N-condition is introduced for the functions of two real variables : The finite function $F(x,y)$ satisfies the (N)-condition on the set E, if for every set $H \subset E$ with $|H| = 0$ on every plane through the z-axis it holds: $|F[H]| = 0$. Here $F[H]$ denotes the set of the values of $F(x,y)$ for $(x,y) \in H$. The notations are those of Saks. There are 2 references, 1 of which is Soviet, and 1 American.

ASSOCIATION: Gomel'skiy gosudarstvennyy pedagogicheskiy institut (Gomel' State Pedagogical Institute)

Card 1/2

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Functions Which Satisfy the (N)-Condition of Luzin SOV/140-58-3-34/34

SUBMITTED: February 28, 1958

Card 2/2 USCOMM-DC-60542

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

AUTHOR: Shmidov, F.I. SOV/140-58-6-26/27

TITLE: Some Differential Properties of a Function of two Variables (Nekotoryye differentsial'nyye svoystva funktsii dvukh peremennykh)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1958, Nr 6, pp 266-271 (USSR)

ABSTRACT: Let E be a bounded point set of the three-dimensional Euclidean space, let $\{M_i\}$ be an infinite point sequence of E with the accumulation point M. If for increasing n the sequence of rays $\overline{MM_n}$ tends to a limit situation ξ, then ξ is an intermediate semi-tangent of E in M. It is shown that in almost every point in which there exists a boundary semi-tangent to $z = f(x,y)$, there $z = f(x,y)$ also has an asymptotic tangent plane containing the boundary semi-tangent. Furthermore: Let the straight line h be not parallel to the z-axis; on a certain point set let $z = f(x,y)$ have asymptotic tangent planes being parallel to h. The orthogonal projection of the set of tangential points onto a plane perpendicular to h has the plane measure zero. Some further similar partly known properties are given. Seven theorems are formulated altogether.

Card 1/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

Some Differential Properties of a Function of two Variables SOV/140-58-6-26/27

There are 2 references, 1 of which is Soviet, and 1 American.

ASSOCIATION: Gomel'skiy pedagogicheskiy institut imeni V.P.Chkalova (Gomel' Pedagogical Institute imeni V.P.Chkalov)

SUBMITTED: February 17, 1958

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

16(1) SOV/140-59-4-25/26

AUTHOR: Shmidov, F.I.

TITLE: On Functions of a Real Variable

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959, Nr 4, pp 224 - 231 (USSR)

ABSTRACT: Let $f(x)$ be a finite function of a real variable defined on the bounded set $E \subset R_1$. Let in every point of E (except an at most denumerable subset) be either

1.) $\underline{f}^-(x) > -\infty$ $\overline{f}^+(x) < +\infty$

or 2.) $\overline{f}^-(x) < +\infty$ $\underline{f}^+(x) > -\infty$

or 3.) $\underline{f}^+(x) > -\infty$ $\overline{f}^+(x) < +\infty$

or 4.) $\underline{f}^-(x) > -\infty$ $\overline{f}^-(x) < +\infty$

Then E consists of the sum of a finite or denumerable sequence of sets, on each of which $f(x)$ satisfies a Lipschitz condition.

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On Functions of a Real Variable SOV/140-59-4-25/26

Theorem 2 contains a similar statement (which is partly already to be found in [Ref 1]) for the case of given behavior of the asymptotic derivative numbers. The proofs are based on [Ref 1].
There are 2 references, 1 of which is Soviet, and 1 American.

ASSOCIATION: Gomel'skiy pedagogicheskiy institut imeni V.P. Chkalova (Gomel' Pedagogical Institute imeni V.P. Chkalov)

SUBMITTED: May 4, 1958

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

16(1)

AUTHOR: Shmidov, F.I. SOV/42-14-4-20/27

TITLE: On Asymptotic Differentiability of Functions of Two Real Variables

PERIODICAL: Uspekhi matematicheskikh nauk, 1959,Vol 14,Nr 4,pp 213-216(USSR)

ABSTRACT: The author joins the notion of the asymptotically total differential given by V.V.Stepanov [Ref 1], and gives necessary and sufficient conditions for the existence of it in the case of a measurable and almost everywhere finite function of two real variables, and investigates the situation of the asymptotic tangenting plane of the graphical representation of the function. Especially it is shown that the orthogonal projection of the set of those points in which this plane is parallel to a given straight line, has the plane measure zero. 3 definitions and 3 theorems are formulated altogether. There are 3 references, 2 of which are Soviet, and 1 American.

SUBMITTED: January 17, 1957

Card 1/1

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMIDOV, F.I.

One application of metric contingencies. Rep. nat. mark 15 no. 6:169-174 N-D '60. (MIRA 14:2)
(Aggregates)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMIDOV, F.I.

Conditions (D) and (N) for functions of one and two real variables. Izv. AN SSSR. Ser. mat. 25 no.5:635-644 S-O '61. (MIRA 14:10)

(Functions of real variables)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHATDOV, F.I.

Denumerability of certain linear sets. Vestsi AN BSSR. Ser. fiz.-tekh. nav. no.2:117-118 '62. (MIRA 18:4)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMIDOV, F.I.

One property of a function of a real variable. Vestsi AN BSSR. Ser.fiz.-tekh.nav. no.1:28-29 '62. (MIRA 16:9)
(Functions of real variables)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"

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SHMIDOV, F.I. (Gomel')

Some properties of functions of a single variable.
Mat. sbor. 58 no.1:29-46 S '62. (MIRA 15:9)
(Functions of real variables)

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ShMIDOV, F.I. (Gomel')

Structural properties of a graph representing a function of two real variables. Izv. vys. ucheb. zav.; mat. no.2:155-163 '63. (MIRA 16:3)
(Graphic methods) (Functions of real variables)

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SHMIDOV, F.I. (Gomel')

Denumerability of a set. Izv. vys. ucheb. zav.; mat. no.5:115-117 '64.
(MIRA 17:12)

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SHMIDOV, F.I.

Properties of derivative and approximate derivative numbers of finite functions. Sib. mat. zhur. 5 no.3:679-711 My-Je '64. (MIRA 17:6)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMIDOV, F.I.

One property of functions of two real variables. Dokl. AN BSSR 8 no. 3:145-146 Mr '64. (MIRA 17:5)

1. Gomel'skoye otdeleniye Instituta matematiki i vychislitel'noy tekhniki AN BSSR. Predstavleno akademikom AN BSSR N.P.Yeruginym.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0

SHMIDOV, F.I.

One differential property of a function of two real variables. Dokl. AN BSSR 9 no.3:145-146 Mr '65. (MIRA 18:6)

1. Gomel'skoye otdeleniye Instituta matematiki i vychislitel'noy tekhniki AN BSSR.

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1. SHMIDOV, G., Eng

2. USSR (600)

4. Kolosova, A.N.

7. Master (2nd class) A.N.Kolosova. Moloch prom. No. 1 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549730011-0"